

exceeds 20%, and a lubricating film of perfluoroether having at least one functional group provided on the protective coating,

a driving part for driving the magnetic recording medium, a magnetic head having a recording part and a reproducing part,

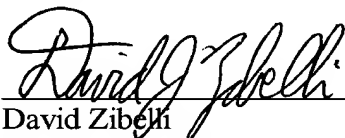
a recording reproducing signal processing part magnetic head, and a magnetoresistive head as the reproducing part of the magnetic head.

REMARKS

Substantive examination and allowance in due course are solicited.

The Office is authorized to charge any fees due under 37 C.F.R. § 1.16 or 1.17 to Deposit Account No. 11-0600. Should there be any questions concerning this matter, the Examiner is invited to contact Applicants undersigned attorney.

Respectfully submitted,


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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claims 1 and 8 as follows.

1. (Amended) A magnetic recording medium, characterized in that in the magnetic recording medium having a magnetic film on a non-magnetic substrate by intercalating at least an under layer, the proportion of functional groups per 1- carbon atoms in a diamond-like carbon protective coating mainly composed of carbon and includes at least one of the -COOH, -C=O, and -CNH₂ as the functional group, for protecting the magnetic film exceeds 20%.

8. (Amended) A magnetic storage apparatus, comprising a magnetic recording medium that in the magnetic recording medium having a magnetic film on a non-magnetic substrate by intercalating at least an under layer, a proportion of functional groups per 100 carbon atoms in a diamond-like carbon protective coating mainly composed of carbon an includes at least one of the -COOH, -C=O, -COH, and -CNH₂ as the functional group, for protecting the magnetic film exceeds 20%, and a lubricating film of perfluoroether having at least one functional group provided on the protective coating,

a driving part for driving the magnetic recording medium,

a magnetic head having a recording part and a reproducing part,

a recovery reproducing signal processing part for giving and receiving a signal to and from the magnetic head, and a magnetoresistive head as the reproducing part of the magnetic head.

Please add new claims 9-11 as follows:

9. (NEW) A magnetic recording medium, characterized in that in the magnetic recording medium having a magnetic film on a non-magnetic substrate by intercalating at least an under layer, the proportion of functional groups per 100 carbon atoms in a diamond-like carbon protective coating mainly composed of carbon and included -COOH, -C=O, -COH, and -CNH₂ as the functional group, for protecting the magnetic film exceeds 20%.

10. (NEW) The magnetic recording medium according to claim 9, wherein a lubricating film of perfluoroether having at least one functional group is provided on the protective coating.

11. (NEW) A magnetic storage apparatus, comprising a magnetic recording medium that in the magnetic recording medium having a magnetic film on a non0magnetic substrate by intercalating at least an under layer, a proportion of functional groups per 100 carbon atoms in a diamond-like carbon protective coating mainly composed of carbon and included -COOH, -C=O, -COH, and -CNH₂ as the functional group, for protecting the magnetic film exceeds 20%, and a lubricating film of perfluoroether having at least one functional group provided on the protective coating,

a driving part for driving the magnetic recording medium, a magnetic head having a recording part and a reproducing part,

a recording reproducing signal processing part magnetic head, and a magnetoresistive head as the reproducing part of the magnetic head.